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ABSTRACT

Spatial dynamics is an instructional strategy whereby students create large scale models that capture the details of a historic event. This Digest discusses classroom floor models and papier mache models. Floor models are best suited to elementary classrooms and middle schools. Papier mache models, appropriate for high school social studies classes, require significant teacher preparation in advance and demand a large commitment of class time. The Digest offers project examples for employing each model in the classroom along with the suggestion to use ancillary materials to enhance the projects. (WG)

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Spatial Dynamics: An Alternative Teaching Tool in the Social Studies

by Carl R. Siler

In elementary school classrooms students are typically engaged in active learning; however, as students progress into middle school, high school, and college, their teachers use less activities-based instruction and more "intellectual" classroom methodologies. Yet active learning has proven to increase motivation, develop valuable skills, and enhance learning in students of all ability levels and grade levels. Teachers at the middle school and high school levels, therefore, need to incorporate more active learning into their classes.

Spatial Dynamics: A Key to Active Learning. Spatial dynamics is an instructional strategy wherein students create large-scale models that capture their interest by allowing them to participate in learning. That participation is maximized because students help design and construct the models. Spatial dynamics activities motivate and enhance the learning of students of all ability levels and grade levels. Learning styles not accommodated by more traditional teaching methods are addressed by spatial dynamics. For example, concrete sequential learners prefer direct, hands-on activities; a spatial dynamics classroom activity provides abundant opportunities for such learners. Spatial dynamics activities also demonstrate a teacher's enthusiasm and commitment to the subject, which further motivates students and yields high-level cognition and learning.

Teachers who use only one teaching style day after day are denying opportunities for achievement to their students who may learn more effectively through a variety of teaching approaches. Furthermore, those teachers quickly become stale and boring to students. The students then perceive the subject matter as uninteresting when it is not the subject matter that is boring, but the teacher's instructional style. Teacher creativity is essential to enhance the educational experience in the classroom, but it is also needed to keep teachers and their students active as learners. Spatial dynamics activities enhance student learning in ways that traditional classroom instruction does not.

In 1994, the National Council for the Social Studies published *Expectations of Excellence: Curriculum Standards for Social Studies* as a statement of purpose and standards for the social studies. In a section of this document on teaching and learning, a "powerful" social studies curriculum was advocated — one that would maximally enhance student achievement. A "powerful" social studies curriculum was identified as one with solid content, containing various instructional approaches and active learning experiences. Spatial dynamics is part of this "powerful" social studies curriculum because it is based on sound social studies content, involves a unique instructional approach, and allows for active learning. "Powerful" social studies teaching, then, requires teachers who can create and implement various creative curriculum plans that actively involve students in the learning process. Finally, exemplary teachers use a variety of instructional techniques, including physical examples. Using spatial dynamics, classroom teachers can easily develop activities which provide physical examples. Spatial dynamics, therefore, is one aspect of a "powerful" social studies curriculum.

Classroom Floor Models. For this Digest, two types of spatial dynamics activities are discussed. One type involves large-scale classroom floor maps or floor models. In such an activity, the concrete details of an historical event are replicated and laid out on the classroom floor. The chairs are moved next to the walls or into the hall for these activities. One such activity on the John F. Kennedy (JFK) assassination uses a large-scale map of Dealey Plaza.

The students, using poster paper, draw the Texas Textbook Depository building with the famous sixth-floor window. They then build a small car out of balsa wood for Kennedy and Connally, lay out the street plan, create the grassy knoll, and make a small replica of Mr. Zapruder, who shot the famous 8 millimeter film of the assassination. Using this large-scale model on the floor, the teacher walks the students through the JFK assassination. A creative teacher can also use primary sources on the assassination such as newspaper articles, CD-ROMs, videotapes, and oral history information to enhance the lesson. Whatever ancillary materials the teacher uses, the floor map remains the focal point of the JFK classroom activity.

Another activity using a large floor model is based on the attack on Pearl Harbor. In this activity, the classroom floor becomes Pearl Harbor, Ford Island, and the surrounding Hawaiian waters. Students draw the outlines of the harbor and Ford Island on the floor and make the various ships in the harbor that day using flat poster board. After the "ships" are placed in the correct locations, the teacher walks the students through the attack. The size and visual appeal of the model stimulates student interest. Again, additional sources such as videotapes, oral histories, and Franklin D. Roosevelt's "Day of Infamy" speech can be used to enhance this activity.

This type of teaching activity can be used in middle school and elementary school classes, too. In an elementary class, in which state and local history is usually taught, a large map of the state is laid out on the classroom floor. Various geographical features, roads, and cities may be added to enhance a lesson. At the middle school level, this type of activity could easily be adapted to a study of the Oregon Trail, railroad expansion, or acquisition of overseas territory by the United States in the late nineteenth century and early twentieth century. At the high school level, a large map of Europe showing the various territory acquisitions of Nazi Germany between 1936 and 1939 could easily be created. Indeed, use of this type of activity is limited only by the imagination and creativity of the teacher.

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Papier Mache Models. A second type of spatial dynamics activity involves using a papier mache model. This activity requires advance teacher preparation and a large time commitment; however, the potential for student learning is extraordinary. Materials needed for this activity are cardboard, papier mache, paint, balsa wood, and newspaper.

For a unit on the Civil War, the class can construct a model of the Gettysburg battlefield measuring three feet by six feet. The students outline the battlefield, including the city of Gettysburg, roads, Culp's Hill, Little Round Top, Big Round Top, Devil's Den, Cemetery Ridge, and Seminary Ridge, all according to scale. Next, the papier mache model is created using cardboard and paint. Students can add rocks and trees, as well as buildings and cannons constructed out of balsa wood. Finally, students paint the model to add clarity and accuracy. Teachers can also use this model to stimulate student interest in other aspects of the war, such as tactics, weapons, use of geography in battles, and features of common soldiers' lives. Scenes from the movies "Gettysburg" or "Glory" or the Ken Burnes PBS series "Civil War" can enrich student learning when used in conjunction with the model of the battlefield. Using the papier mache battlefield as a focal point for a Civil War study adds detail, dimension, and substance to this topic and promotes active learning.

Another papier mache model that students can make is a World War I battlefield, approximately three to four feet square, composed of the opposing trenches and "no man's land." The trench lines with their supporting trenches and barbed wire and a barren "no man's land" with a downed airplane add realism to the study of a war. The lesson can focus on the origins of the trenches in World War I, living conditions in the trenches, and the use of new technologies invented during this war. The realism of this model can greatly enhance students' understanding of many aspects of this war.

Papier mache models can be used to illustrate other topics, such as early American roads and bridges, the Erie Canal, or state and local history. For example, for a unit on state history, a teacher can use a state road map to cut an outline of the state, and the students can build a papier mache model complete with land elevations, rivers, cities, railroads, and roads.

Conclusion. Teachers who use a spatial dynamics activity must be prepared to expend the extra time and energy necessary. For example, a spatial dynamics activity demands that the teacher allow ample class time for students to engage in the activity. Teachers' time is scarce; therefore, they must be selective in what they teach and the methodologies they use. Because improved student motivation and learning are just some of the positive outcomes of the spatial dynamics approach, it is an excellent use of instructional time.

References and ERIC Resources. The following list of resources includes references used to prepare this Digest. The items followed by an ED number are available in microfiche and/or paper copies from the ERIC Document Reproduction Service (EDRS). For information about prices, contact EDRS, 7420 Fullerton Road, Suite 110, Springfield, Virginia 22153-2852; telephone numbers are (703) 440-1400 and (800) 443-3742. Entries followed by an EJ number, annotated monthly in CURRENT INDEX TO JOURNALS IN EDUCATION (CIJE), are not available through EDRS. However, they can be located in the journal section of most larger libraries by using the bibliographic information provided, requested through Interlibrary Loan, or ordered from commercial reprint services.

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